

CLAIMS

1. A grease comprising a base grease and an additive, wherein the base grease comprises a base oil and a thickener, and the additive comprises a substance selected from among bismuth and inorganic bismuth compounds.

2. The grease according to claim 1, wherein 0.01 to 15 wt% of the substance is added to a total amount of said base grease and said additive.

3. The grease according to claim 1, wherein said bismuth is bismuth powder.

4. The grease according to claim 1, wherein said inorganic bismuth compounds are at least one inorganic bismuth selected from among bismuth sulfate, bismuth trioxide, bismuth carbonate, and sodium bismuthate.

5. The grease according to claim 1, wherein said base oil is at least one oil selected from among poly- α -olefin oil, mineral oil, ester oil, and ether oil.

6. The grease according to claim 5, wherein said base oil has a kinematic viscosity of 20 to 200 mm²/s at 40°C.

7. The grease according to claim 1, wherein said thickener is at least one compound selected from among urea-based compounds and lithium soap.

8. A rolling bearing comprising an inner ring; an outer ring; a plurality of rolling elements interposed between said inner ring and said outer ring, wherein a grease is applied to a periphery of said rolling elements; and said grease is as defined in claim 1.

9. The rolling bearing according to claim 8, wherein said rolling bearing is a roller bearing.

10. The rolling bearing according to claim 8, wherein said rolling bearing has a thrust sliding surface.

11. The rolling bearing according to claim 8, wherein said rolling bearing is used for a wheel.

12. The rolling bearing according to claim 11, wherein said rolling bearing for use in a wheel is a rolling bearing, for use in a rolling stock, having a flange and is used as a rolling bearing for an axle of said rolling stock or as a rolling bearing for use in a main motor.

13. The rolling bearing according to claim 11, wherein said rolling bearing for use in a wheel is a rolling bearing, for use in a wheel-supporting apparatus, having a thrust sliding surface and is used for said wheel-supporting apparatus rotatably supporting a rotary member that is rotated together with said wheel by means of a grease-enclosed rolling bearing mounted on an outside-diameter surface of an axle.

14. The rolling bearing according to claim 11, wherein said rolling bearing for use in a wheel is a rolling bearing, for use in a rolling neck of a rolling machine, having a thrust sliding surface; an inner ring has one double row inner ring; an outer ring has one double row outer ring and two single row outer rings disposed at both ends of said double row outer ring through a spacer; rolling elements are circumferentially rotatably disposed in four rows between said inner ring and said outer ring; and an annular seal member is mounted at both ends of said outer ring.

15. The rolling bearing according to claim 8, wherein said rolling bearing comprises a metal inner ring having a rolling surface on a peripheral surface thereof; a metal outer ring, having a rolling surface on an inner peripheral surface thereof, which is disposed concentrically with said metal inner ring; and a plurality of metal rolling elements disposed between said both

rolling surfaces, wherein a coating film of at least one substance selected from among bismuth and inorganic bismuth compounds is formed on at least one contact surface selected from among said both rolling surfaces and surfaces of said rolling elements.

16. The rolling bearing according to claim 15, wherein said inorganic bismuth compounds are bismuth oxides.

17. The rolling bearing according to claim 8 for use in a wheel-supporting rolling bearing unit, wherein said wheel-supporting rolling bearing unit comprises a stationary side bearing ring fixedly supported by a suspending apparatus when said rolling bearing unit is operated; a rotary side bearing ring fixedly supporting a wheel when said rolling bearing unit is operated; and a plurality of rolling elements provided between a stationary side rolling surface present on a surface of said stationary side bearing ring and a rotary side rolling surface present on a surface, of said rotary side bearing ring, confronting said surface of said stationary side bearing ring, wherein a rolling contact portion between each of said rolling elements and said stationary side rolling surface as well as said rotary side rolling surface are lubricated by grease.

18. A constant velocity joint in which a rotational torque is transmitted by engagement between a track groove and a rolling

element, and by rolling of said rolling element along said track groove, an axial movement is performed, and

a grease enclosed in said constant velocity joint is said grease according to claim 1.

19. The constant velocity joint according to claim 18, wherein said base oil of said grease has a kinematic viscosity of 30 to 500 mm²/s at 40°C.

20. A rolling part having a coating film of one substance selected from among bismuth and inorganic bismuth compounds formed on a surface thereof and being used in contact with said grease according to claim 1.

21. The rolling part according to claim 20, wherein said inorganic bismuth compounds are bismuth oxides.

22. The rolling bearing according to claim 8, wherein said rolling bearing, wherein a main shaft on which a blade is mounted is used for a main shaft-supporting apparatus for wind power generation supported by at least one rolling bearing mounted on a bearing housing.